IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CORTEVA AGRISCIENCE LLC, PIONEER HI-BRED INTERNATIONAL, INC. and AGRIGENETICS, INC.,	)	
Plaintiffs,	)	
v.	)	C.A. No. 23-1059 (JFM)
INARI AGRICULTURE, INC. and INARI AGRICULTURE NV,	)	
Defendants.	)	

INARI DEFENDANTS' ANSWERING CLAIM CONSTRUCTION BRIEF

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April 21, 2025

TABLE OF CONTENTS

TABLE OF AUTHORITIES

Page(s)

CASES

STATUTES

MISCELLANEOUS

I. INTRODUCTION

Far from relating to groundbreaking transgenic-plant technology, Corteva's Patents concern the routine transformation of plants with prior art insect and herbicide resistance transgenes using standard expression cassettes and standard transformation procedures.

Corteva's U.S. Patent Nos. 7,956,246 (the "'246 patent"), 8,575,434 (the "'434 patent") and 8,901,378 (the "'378 patent") are to transgenic corn events, and 8,680,363 (the "'363 patent") and 9,695,441 (the "'441 patent") are to transgenic soybean events. The transgenes used in these events are not novel, and were in previous transgenic events extensively planted on farms.

To overcome obviousness rejections in the applications for the patents, Corteva relied on limitations in the claims requiring the inserted transgenes to be adjacent to specific flanking or junction sequences. The flanking or junction sequences are artifacts of the transformation process. They are the plant genome DNA sequences adjacent to and contiguous with the 5' and 3' ends of the transgene construct that was randomly inserted into the plant genome by transformation. The flanking sequences are unique to each distinct transformation event. Because plant genetic transformation is random and leads to unpredictable results, subsequent transformations with the same transgene construct will not result in the insertion of the transgene construct into the identical locus in the plant genome—hence the requirement of a seed patent deposit for enablement of plant transgenic events under 35 U.S.C. § 112. The only alleged benefit of the flanking sequences disclosed in the patents is their use in identifying the specific transformation event claimed in the patents. Inari's proposed claim constructions for the '246, '434, '378, '363, and '441 patents are directed to construing the claims of these Corteva Patents so that they are limited to the specific "events" defined by the claims leading to their allowance.

Corteva's U.S. Patent No. 8,283,522 (the "'522 patent") is not an "event" patent and instead claims a version of a known bacterial gene, AAD, conferring resistance to arlyoxyalkanoate herbicides. The '522 patent specification emphasizes that the version of the gene claimed, AAD-12, unlike other versions of the AAD gene, could confer effective resistance in plants to both 2,4-D and pyridyloxyacetate herbicides.

Corteva's proposed construction is that the polynucleotide of claim 1 of the '522 patent encodes a protein with the ability to degrade "an" aryloxyalkanoate herbicide. Inari's proposed claim construction, on the other hand, adheres to the alleged distinguishing properties of the AAD-12 protein encoded by the claimed polynucleotide: that the polynucleotide encodes a protein that confers resistance in a plant to "both" phenoxyacetate and pyridyloxyacetate auxin herbicides.

In this litigation, Corteva has alleged infringement of all the patents-in-suit under 35 U.S.C. §§ 271(a), (b), and (f)(2). Section 271(f)(2) concerns infringement where a component of a patented invention, whose use or sale in the United States uncombined would otherwise not be an infringement of a patent, may be an infringement if supplied for purposes of combination with other components of the patented invention outside the United States in a manner that would infringe the patent if the combination had occurred in the United States. Corteva's infringement allegations under §§ 271(a) and (b) belie its claims under § 271(f)(2).

For example, Corteva asserts that claim 2 of the '441 patent, directed to a soybean seed, plant or part thereof, with no other component recited in the claim, is infringed by Inari under §§ 271(a), (b), and (f)(2). Corteva alleges that the phytosanitary testing of the seed in the United States is an infringement under § 271(a). The allegation of infringement under § 271(a) is premised on the fact that the seed itself is the patented invention whose use in the United States is patent infringement. Logically and legally, the patented seed cannot otherwise be a non-infringing

uncombined component of a combination invention whose use in the United States would not be infringing. Corteva's allegations under § 271(a), therefore, refute its allegations of infringement under § 271(f)(2). Corteva conjures up other components to claim 2, *i.e.*, nutrients, light, water, physical support, which are not in the claim or the specification, to allege infringement under § 271(f)(2). Inari submits that these fictional components to a claim for a seed or plant should not give rise to a claim construction issue. Corteva's overreach in asserting § 271(f)(2) is instead a question of statutory construction and interpretation, and Inari thus does not address this issue in this briefing on claim construction.

As Corteva admits in its Opening Claim Construction Brief ("Corteva's Opening Brief"), D.I. 208, Inari has been transparent about its conduct. All of Inari's allegedly infringing acts, except for the phytosanitary testing and export of patent deposit seeds, have occurred in Belgium, beyond the jurisdiction of the U.S. patent laws. Belgium is a jurisdiction with its own patent laws that permit Inari's research and development activities. Inari has not imported into or sold any seed products in the United States related to the '246, '434, '378, '363, '441, and '522 patents.

II. TECHNOLOGY OVERVIEW

The Technology Overview in Corteva's Opening Brief, D.I. 208, adequately describes certain basic aspects of the relevant technology. In addition, it is important for an understanding of the Corteva Patents that the transformation procedures used to produce the transgenic events in the patents result in random integration of the transgene into the plant genome resulting in unique transformation events. The excerpts below from the patents-in-suit are illustrative of this aspect of the technology and the significance of "junction" or "flanking" sequences.

> [T]he introduction and integration of a transgene into a plant genome involves some random events (hence the name "event" for a given insertion that is expressed). That is, with many transformation techniques such as *Agrobacterium* transformation, the biolistic transformation (i.e. gene gun), and silicon car-bide

> mediated transformation (i.e. WHISKERS), it is unpredictable where in the genome a transgene will become inserted. Thus, identifying the flanking plant genomic DNA on both sides of the insert can be important for identifying a plant that has a given insertion event. For example, PCR primers can be designed that generate a PCR amplicon across the junction region of the insert and the host genome. This PCR amplicon can be used to identify a unique or distinct type of insertion event.

See, e.g., '363 patent (D.I. 209-5) at 5:62-6:9; '441 patent (D.I. 209-6) at 6:1-15.

> Transformation procedures leading to random integration of the foreign DNA will result in transformants containing different flanking regions characteristic and unique for each transformant. When recombinant DNA is introduced into a plant through traditional crossing, its flanking regions will generally not be changed. Transformants will also contain unique junctions between a piece of heterologous insert DNA and genomic DNA, or two (2) pieces of genomic DNA, or two (2) pieces of heterologous DNA. A "junction" is a point where two (2) specific DNA fragments join. For example, a junction exists where insert DNA joins flanking DNA. A junction point also exists in a transformed organism where two (2) DNA fragments join together in a manner that is modified from that found in the native organism. "Junction DNA" refers to DNA that comprises a junction point.

See, e.g., '246 patent (D.I. 209-3) at 8:39-54; *see also* '434 patent (D.I. 209-2) at 8:4-34; '378 patent (D.I. 209-7) at 7:19-46.

III. DISPUTED TERMS

Inari addresses each of the claim terms in accordance with the sequence in which they were addressed in Corteva's Opening Brief, D.I. 208.

A. '434 Patent

The relevant claims of the '434 Patent are reproduced below.

1. A DNA construct comprising: a first, second, third and fourth expression cassette, wherein said first expression cassette in operable linkage comprises:

   (a) a maize ubiquitin promoter;
   (b) a 5′ untranslated exon of a maize ubiquitin gene;
   (c) a maize ubiquitin first intron;
   (d) a Cry1F encoding DNA molecule; and
   (e) a poly(A) addition signal from ORF 25 terminator;

   said second expression cassette in operable linkage comprises:

   (1) a maize ubiquitin promoter;

(2) a 5′ untranslated exon of a maize ubiquitin gene;
(3) a maize ubiquitin first intron;
(4) a Cry34Ab1 encoding DNA molecule; and
(5) a PinII transcriptional terminator;

said third expression cassette in operable linkage comprises;

(i) a wheat peroxidase promoter;
(ii) a Cry35Ab1 encoding DNA molecule; and
(iii) a PinII transcriptional terminator; and

said fourth expression cassette in operable linkage comprises;

(a) a CaMV 35S promoter;
(b) a pat encoding DNA molecule; and
(c) a 3′ transcriptional terminator from CaMV 35S;

wherein the four cassettes are flanked by SEQ ID NO: 27 at the 5' end and SEQ ID NO: 28 at the 3' end.

5. A corn plant comprising the genotype of the corn event DP-004114-3 deposited with American Type Culture Collection (ATCC) under Accession No. PTA-11506, wherein said genotype comprises the DNA construct of claim 1.

'434 patent (D.I. 209-2) at cls. 1, 5.

1. "DNA Construct" ('434 patent, cls. 1-2, 5, 8)

Corteva's Construction	Inari's Construction
Plain and ordinary meaning, which is assembly of DNA molecules linked together.	A DNA construct comprising the first, second, third, and fourth expression cassettes (recited in claim 1) flanked by SEQ ID NO: 27 on the 5' end and SEQ ID NO: 28 on the 3' end.

Inari's proposed construction is based on the language of claim 1 and the amendments to the original presented claim made to overcome the obviousness rejections in the February 4, 2013 Non-Final Rejection. February 4, 2013 Non-Final Rejection (D.I. 209-8) at 6-11. Original claim 1 defined the DNA construct as comprising the four expression cassettes recited in the claim and did not include the flanking regions of SEQ ID NO: 27 at the 5' end and SEQ ID NO: 28 at the 3'

end. To overcome the obviousness rejection, Corteva amended the claim on May 2, 2013 to include:

> "wherein the DNA construct is flanked by the 5' junction sequence of SEQ ID NO: 27 and the 3' junction sequence of SEQ ID NO: 28."

May 2, 2013 Response to Office Action (D.I. 209-9) at 3. In a subsequent Examiner-Initiated Interview on June 10, 2013, Corteva agreed to the entry of an Examiner's amendment clarifying that SEQ ID NOS: 27 and 28 were part of the DNA construct. Ex. 1 (July 1, 2013 Examiner-Initiated Interview Summary); *see also* Ex. 2 (July 1, 2013 Notice of Allowance) at 7-9.[1] The examiner's amendment was as follows (added language underscored, deleted language stricken out):

> "wherein the ~~DNA construct is~~ four cassettes are flanked by ~~the 5' junction sequence of~~ SEQ ID NO: 27 at the 5' end and ~~the 3' junction sequence of~~ SEQ ID NO: 28 at the 3'end."

Ex. 2 at 4.

The Examiner's amendment unequivocally establishes that the Examiner considered the flanking sequences of SEQ ID NOS: 27 and 28 to be an integral part of the DNA construct in accordance with the open-ended comprising language of the preamble. *See Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 33-34 (1966) (rejecting patentee's proposed construction that attempted to cover scope relinquished by accepting examiner's amendments). This construction also accords with the Examiner's obviousness rejection, which found that all four of the expression cassettes were known in the prior art and their combination into one DNA construct was obvious. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005) (noting that prosecution history can inform the meaning of the claim language limiting the invention during prosecution).

[1] Page numbers cited for Inari's exhibits refer to the pdf page number unless otherwise stated.

Corteva's reference to the description of a DNA construct in the '434 patent at 9:40-41 as an assembly of DNA molecules linked together that provide one or more expression cassettes is not incompatible with Inari's proposed construction. Corteva's Opening Brief (D.I. 208) at 9 (citing '434 patent at 9:40-41). The DNA construct described in the '434 patent is not limited to expression cassettes. It can include other DNA regions. For example, "[t]he DNA construct may be a plasmid," '434 patent (D.I. 209-2) at 9:41-42, or include a number of other regions recited "among others," *id.* at 9:43-48. The specification, the open ended "comprising" language of claim 1, and the Examiner's amendment convey to a person skilled in the art that SEQ ID NOS: 27 and 28 are part of the DNA construct of claims 1-2, 5, and 8.

2. "corn event DP-004114-3" and "genotype of the corn event DP-004114-3" ('434 patent, cls. 5-6, 8, 14-15)

Corteva's Construction	Inari's Construction
"a Cry1F-encoding expression cassette, a Cry34Ab1-encoding expression cassette, a Cry35Ab1-encoding expression cassette, and a pat-encoding expression cassette, located between SEQ ID NO: 27 at the 5' end and SEQ ID NO: 28 at the 3' end."[2]	The complete sequence of the insert and flanking regions of event DP-004114-3, as disclosed in SEQ ID NO: 6, which includes the four cassettes disclosed in Claim 1 flanked by SEQ ID NO: 27 at the 5' end and SEQ ID NO: 28 at the 3' end.

The construction of the term "corn event DP-004114-3" in claims 5-6, 8, and 14-15 and "the genotype of corn event DP-004114-3" in claims 5 and 6 are indistinguishable. A transgenic event is defined by its genotype, the T-DNA inserted into the plant genome by the transformation, and its location in the plant's genome. *Id.* at 10:14-25.

For example, claim 5 uses open-ended "comprising" language in relation to the genotype of DP-004114-3. While Inari agrees that corn event DP-004114-3 must include the Cry1F, Cry34Ab1, Cry35Ab1, pat encoding expression cassettes, and flanking sequences SEQ ID

[2] Corteva proposes the Court construe "the genotype of the corn event DP-004114-3" as "the genetic constitution of the corn event DP-004414-3." D.I. 208 at 12.

NOS: 27 and 28 of the DNA construct of claim 1, the event also comprises additional DNA sequences inserted into the corn plant genome by the transformation event. SEQ ID NO: 6 is the sequence of the intact T-DNA inserted into the recipient corn genome in the DP-004114-3 event. *Id.* at 35:30-45, cols. 59-73. The Cry1F, Cry34Ab1, Cry35Ab1, pat encoding expression cassettes were known in the prior art and contained in various corn transformation events. The full length of the T-DNA inserted into the corn genome, the event DP-004114-3 genotype, not just the DNA construct of the Cry1F, Cry34Ab1, Cry35Ab1, pat encoding expression cassettes, and flanking sequences SEQ ID NOS: 27 and 28 of claim 1, is what distinguishes event DP-004114-3 from the prior art.

Example 4 of the '434 patent describes the "Sequencing Characterization of Insert and Genomic Border Regions of Maize Event DP-004114-3." *Id.* at 31:57-36:40. As described in Example 4, "[t]he sequence of the insertion [of DP-04414-3] is presented in SEQ ID NO: 6." *Id.* at 35:44-45. SEQ ID NO: 6 also contains the 5' and 3' genomic border sequences of the event. *Id.* at 35:51-53, 35:59-61. SEQ ID NO: 6 defines the genotype of DP-004114-3, the T-DNA insert, and its location in the corn genome. *Id.* at cols. 59-74, SEQ ID NO: 6.

In its May 2, 2013 Amendment remarks addressing the Examiner's enablement rejection Corteva argued that "the specification is enabling for the genotype of corn comprising the DP-004114-3 event," pointing out that Example 4 confirmed "16,752 bp of 4114 maize genomic sequence (SEQ ID NO: 6)." May 2, 2013 Response to Office Action (D.I. 209-9) at 14; *see also* '434 patent (D.I. 209-2)at 35:62-65. The Examiner allowed the claims shortly after without further enablement rejections. Ex. 2 at 6. The '434 patent uses "4114 maize," "maize event DP-0041114-3," "maize line DP-004114-3," and "DP-004114-3" interchangeably. '434 patent (D.I. 209-2) at 1:25-31. By arguing that the "4114 maize genomic sequence," is that of SEQ ID NO: 6, Corteva

cannot now claim that corn event DP-004114-3 is different from SEQ ID NO: 6. *Springs Window Fashions LP v. Novo Indus., L.P.*, 323 F.3d 989, 995 (Fed. Cir. 2003) ("The public notice function of a patent and its prosecution history requires that a patentee be held to what he declares during the prosecution of his patent.").

Claim 26 of the '434 patent further confirms that a person skilled in the art of transgenic corn breeding would understand that SEQ ID NO: 6 defines DP-004114-3 and its genotype. Claim 26 is directed to a method for producing a corn plant resistant to at least corn rootworm. The method comprises the steps of sexually crossing a first parent corn plant with a second parent corn plant that is event DP-004114-3, selecting a progeny of that cross that is resistant to corn rootworm, backcrossing that first generation progeny to a corn plant that lacks corn event DP-004114-3 and selecting for backcross progeny plants resistant to corn rootworm wherein the backcross progeny comprises SEQ ID NO: 6. A person skilled in the art of corn breeding would clearly understand that a DP-004114-3 corn plant comprises SEQ ID NO: 6. SEQ ID NO: 6 is the DNA sequence that defines DP-004114-3 and distinguishes it from other transgenic corn "events."

Inari's proposed construction does not import a limitation into claims 5-6, 8, and 14-15. On the contrary, it construes corn event DP-004114-3 as it is described in the '434 patent specification and claims and as it would be understood by the skilled artisan. *Actelion Pharms. LTD v. Mylan Pharms. Inc.*, 85 F.4th 1167, 1172 (Fed. Cir. Nov. 6, 2023) (noting that the specification is "always highly relevant to the claim construction analysis," and "the single best guide to the meaning of a disputed term") (citation omitted).

Corteva's reliance on the February 4, 2013 Non-Final Office Action and May 2, 2013 response does not refute Inari's construction. Claim 1 pending at the time of the rejection was to a DNA construct comprising the four expression cassettes and claim 4 was to a plant comprising

the sequence set forth in SEQ ID NO: 6. Ex. 3 (Claim 1 of the '434 Patent as Originally Filed) at 2. In the February 4, 2013 Office Action, the Examiner indicated that the Cry1F, Cry34Ab1, Cry35Ab1, and pat encoding expression cassettes were well known in the prior art and the flanking sequences to the construct SEQ ID NOS: 27 and 28 distinguished event DP-004114-3. February 4, 2013 Non-Final Rejection (D.I. 209-8) at 9-11, 13. In response, Corteva amended then claim 1 to include flanking sequences SEQ ID NOS: 27 and 28 to distinguish from the prior art and enable the claims. May 2, 2013 Response to Office Action (D.I. 209-9) at 16; *see Phillips*, 415 F.3d at 1317. Claim 1 is to a DNA construct and does not recite event DP-004114-3 or the "genotype of corn event DP-00411-3." '434 patent (D.I. 209-2) at cl. 1. The construct and the genotype are not the same, even though the genotype comprises the construct.

The claimed utility of DP-004114-3 event corn is to produce insect resistant progeny corn plants. There is no doubt that SEQ ID NOS: 27 and 28 are included in DP-004114-3. But the '434 patent specification and claim 26 make clear that when non-DP-004114-3 corn is crossed with DP-004114-3 event corn, the progeny DP-004114-3 plants comprise SEQ ID NO: 6 DNA. SEQ ID NO: 6 is the genotype of DP-004114-3 and defines corn event DP-004114-3. Corteva's construction should be rejected.

3. "flanked by" ('434 patent, cl. 1; '378 patent, cl. 1)

Corteva's Construction	Inari's Construction
Plain and ordinary meaning, which is joined or connected at the side to.	Adjacent to.

Inari submits that there is no appreciable difference between the parties' constructions. As pointed out by Corteva in its Opening Claim Construction Brief, D.I. 208 at 13, the specifications use the term "adjacent" in describing the position of the flanking sequences to the heterologous inserted DNA. For example, the '434 patent describes the "flanking sequence [as] immediately

adjacent to the inserted DNA." '434 patent (D.I. 209-2) at 10:43-44; *see also id.* at 2:35-36, 16:35-36, 17:9-10, 17:12-13, 17:23-24. The '378 patent contains similar if not identical language. '378 patent (D.I. 209-7) at 2:32-36, 9:49-58, 15:53-54, 16:24-36, 16:42-43, 20:6-7. Inari's construction uses the exact language of the patent specification and should be adopted over the dictionary definition proposed by Corteva. *Interactive Gift Exp., Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001) ("It is well-settled that, in interpreting an asserted claim, the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history. Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language.") (citation omitted).

Corteva's arguments as to why Inari's proposed construction is inappropriate also fail. Corteva argues that Inari's proposed construction "attempts to narrow the claims by requiring that a flanking sequence is ***always*** adjacent to inserted DNA." Corteva's Opening Brief (D.I. 208) at 14 (emphasis in original). Yet, Corteva's proposed construction would also require the flanking sequence is ***always*** "joined or connected" to the inserted DNA.

4. "derived from" ('434 patent, cl. 14)

Corteva's Construction	Inari's Construction
Plain and ordinary meaning, which is formed or developed out of.	Extracted or processed from.

Claim 14 is directed to a biological sample derived from DP-004114-3 plant, tissue, or seed that comprises a nucleic acid sequence of SEQ ID NO: 27 or 28 that is detectable by an amplicon or nucleic acid hybridization method. The ostensible utility of the claim 14 biological sample is in assays to determine if a particular corn plant comprises the DP-004114-3 event. *See, e.g.*, '434 patent (D.I. 209-2) at 3:62-4:4 (describing an embodiment where DNA is "***extracted from*** corn

event DP-004114-3" in order to detect the presence of the DNA corresponding to DP-004114-3) (emphasis added), 4:5-27 (describing a method for detecting DNA corresponding to DP-004114-3 which includes "contacting the sample comprising DNA ***extracted from*** a corn plant") (emphasis added), Examples 2 & 4. In the context of the claim, for the biological sample to be useful for such assays, it must be extracted from or processed so that the nucleic acid can be detected by an amplicon or nucleic acid hybridization.

The specification supports Inari's position. For example, in describing how to confirm the DP-004114-3 genotype via event specific PCR analysis, the specification explains that a leaf sample is taken from test and control plants and then DNA is "extracted from each leaf sample." '434 patent (D.I. 209-2) at 32:34-39. The extracted DNA is then assayed and given a positive or negative event determination based on a comparison to a given threshold. *Id.* at 32:54-63.

In support of its construction of plain and ordinary meaning, Corteva refers to instances in the '434 patent specification relating to food or feed products derived from plant material, corn plants derived from transformation and plants, and plant cells and seeds derived from patent deposit ATCC PTA-11506. Corteva's Opening Brief (D.I. 208) at 14. Corteva's examples from the specification have no relevance to the use of the term "derived from" in claim 14 directed to assays for nucleic acids. *Phillips*, 415 F.3d at 1314 ("[T]he context in which a term is used in the asserted claim can be highly instructive.").

Inari's proposed construction, "extracted or processed from," is directly relevant to how a person of ordinary skill in the art would understand the use of the term "derived from" so that the biological sample can be used in the hybridization assays to which the claim is apparently directed. Inari's construction should be adopted.

5. "wherein said sample comprises a nucleotide sequence selected from the group consisting of SEQ ID NO: 27 and SEQ ID NO: 28, or the complement thereof" ('434 patent, cl. 14)

Corteva's Construction	Inari's Construction
This language should be interpreted as a Markush group, which is "wherein said sample comprises a nucleotide sequence comprising any of: SEQ ID NO: 27, the complement of SEQ ID NO: 27, SEQ ID NO: 28, or the complement of SEQ ID NO: 28."	Plain and ordinary meaning, which is "wherein the sample comprises in its DNA a nucleotide sequence selected from the group consisting of SEQ ID NO: 27, or the complement thereof, located at the 5' end of the insert and SEQ ID NO: 28, or the complement thereof, located at the 3' end of the insert."[3]

Inari submits that there is no appreciable difference between the party's constructions. Inari does not contest that claim 14 is to a two member Markush group and that it incorrectly, through typographical error, indicated that SEQ ID NO: 27 was located at the 3' end and SEQ ID NO: 28 was at the 5' end when the reverse is correct. Inari does not object to Corteva's construction.

B. '246 Patent

1. "wherein: (a) said flanking region comprises a nucleotide sequence selected from the group consisting of the nucleotide sequence set forth in SEQ ID NO: 19 and the nucleotide sequence set forth in SEQ ID NO: 20" ('246 patent, cl. 1)

Corteva's Construction	Inari's Construction
This language should be interpreted as a Markush group, which is "wherein (a) said flanking region comprises a nucleotide sequence comprising SEQ ID NO: 19 or SEQ ID NO: 20"	Wherein the nucleotide sequence SEQ ID NO: 19 is linked to and contiguous with the 5' end of the DNA construct and the nucleotide sequence SEQ ID NO: 20 is linked to and contiguous with the 3' end of the DNA construct.

Inari does not dispute that claim 1 (a) is directed to a two member Markush group. The use of "and" in Inari's construction instead of "or" as in Corteva's construction uses the exact

[3] Inari's construction here has been revised to correctly indicate that SEQ ID NO: 27 is located at the 5' end and that SEQ ID NO: 28 is located at the 3' end.

language of claim 1 and does not construe the claim as a non-Markush claim requiring two flanking regions as argued by Corteva. Corteva's Opening Brief (D.I. 208) at 17.

Inari is not proposing that the DNA construct must have only one flanking region. Indeed, a corn plant containing a DNA construct ***having*** only one flanking region is not enabled or described in the '246 patent, and invalid under 35 U.S.C. § 112. *AbbVie Deutschland GmbH & Co., KG v. Janssen Biotech, Inc.*, 759 F.3d 1285, 1298 (Fed. Cir. 2014) (explaining that the written description requirement mandates drafters of patent applications to "describe their inventions as well as disclose how to enable their use"). Claim 1 recites that the DNA construct is "linked" to at least one of the flanking regions. '246 patent (D.I. 209-3) at 77:27-28. Inari's construction is consistent with the description in the '246 patent specification and the specific position of each flanking region to the DNA construct for DAS-59122-7. Inari construes the claim so that the flanking region of SEQ ID NO: 19 is linked to and contiguous with the 5' end of the DNA construct and SEQ ID NO: 20 is linked to and contiguous with the 3' end as described in the specification. *See, e.g.*, *id.* at 3:65-4:5 (describing the invention as relating to the specific flanking sequences of DAS-59122-7 namely "the 5' and/or 3' flanking regions of DAS-59122-7, SEQ ID NO: 19, 5' flanking and SEQ ID NO: 20, 3' flanking, respectively"), 8:33-54 (defining "flanking region" or "flanking sequence"). For example, if Claim 1 were to be construed as including an instance where SEQ ID NO: 20 was adjacent to the 5' end of the transgene insert, it would not only be contrary to the description of the patent specification and DAS-59122-7, but it would also be directed to an inoperative embodiment. Inari's construction should be adopted.

2. "linked" ('246 patent, cls. 1, 3)

Corteva's Construction	Inari's Construction
Plain and ordinary meaning, which is joined or connected.	Contiguous with.

Claims 1 recites "a DNA construct linked to at least one flanking region", while claim 3 which depends on claim 1, recites "said DNA construct linked to a first and second flanking region." "Linked" in the context of these claims refers to the linkage between the flanking regions and the DNA construct, not the linkage between the elements in the DNA construct itself such as the promoter and coding sequence.

In support of its plain and ordinary meaning construction, Corteva argues that "linked," as used in the specification, refers only to operably linked components in the DNA construct, which must be contiguous to be in the same reading frame. Corteva's Opening Brief (D.I. 208) at 18. According to Corteva, therefore, the linkage between the flanking region and the DNA construct in claims 1 and 3 need not be contiguous. However, the reference to operable linkage of components in the DNA construct does not imply that the flanking regions are not linked and contiguous with the DNA construct. On the contrary, the teachings of the '246 patent are clear that this is the case.

For example, the '246 patent states that a "'flanking region' or 'flanking sequence' . . . is located either immediately upstream of and contiguous with or immediately downstream of and contiguous with the original foreign insert DNA molecule." '246 patent (D.I. 209-3) at 8:33-39. In the context of claims 1 and 3, the foreign insert DNA molecule is the DNA construct, and the flanking regions are linked to the DNA construct. "Linked," as used in claims 1 and 3, therefore should be construed so that the flanking sequences are contiguous with the DNA construct. *3M Innovative Props. Co. v. Avery Dennison Corp.*, 350 F.3d 1365, 1371 (Fed. Cir. 2003) ("[A] definition of a claim term in the specification will prevail over a term's ordinary meaning if the patentee has acted as his own lexicographer and clearly set forth a different definition.").

C. The '522 Patent

1. "a polynucleotide that encodes a protein having aryloxyalkanoate dioxygenase activity" ('522 patent, cls. 1-2)

Corteva's Construction	Inari's Construction
Plain and ordinary meaning. A polynucleotide is a polymeric molecule composed of multiple nucleotides. A protein having aryloxyalkanoate dioxygenase activity is a protein with the ability to degrade or diminish the activity of an aryloxyalkanoate herbicide.	Activity capable of degrading phenoxyacetate auxin and pyridyloxyacetate auxin herbicides to confer resistance to a plant to such herbicides.

As described in the '522 patent, the invention relates to recombinantly expressed aryloxyanolate dioxygenase degrading enzyme (AAD-12) capable of degrading phenoxy and/or pyridyloxy auxin herbicides. '522 patent (D.I. 209-4) at 12:8-29. The invention was described as including methods of controlling weeds by applying one or more pyridyloxyacetate or phenoxyacetate auxin herbicides to plants comprising the AAD-12 gene. *Id.* at 4:59-62. The specification represents that this was the first report of an enzyme with significant activity on pyridyloxyacetic acid herbicides. No other 2,4-D (*i.e.*, AAD) degrading enzyme had been reported with similar activity. *Id.* at 3:56-58, 4:29-40, 4:51-5:5, 6:18-8:65, 10:66-11:14, 11:26-35, 12:22-43, 53:28-30. 2,4-D is 2,4-dichlorophenoxyacetic acid, *id.* at 2:24, in the phenoxy acid class of herbicides, *id.* at 2:39. While other AAD enzymes were known to degrade phenoxy acetate auxin herbicides such as 2,4-D, Corteva represented that the claimed AAD-12 enzyme was special because it could also degrade pyridyloxyacetic acid herbicides. Corteva stated that the functional expression of AAD-12 in planta and resulting herbicide resistance to 2,4-D and pyridyloxyacetate herbicides were unexpected.

During prosecution of the application for the '522 patent, to overcome rejections for anticipation and obviousness, Corteva emphasized the experiments in Example 14, *id.* at 83:24-85:14, where the claimed AAD-12 gene was compared to the prior art AAD-2 gene in plants for

protection against 2,4-D herbicide injury. Ex. 4 (October 14, 2011 Response to Office Action) at 6-7. Even though the AAD-2 gene was expressed in plants, it offered little protection against injury by 2,4-D herbicide as compared to AAD-12. In the October 14, 2011 Response to Office Action, Corteva argued that AAD-12 was surprisingly much better in plants than AAD-2 even though AAD-2 had a higher level of identity to the cited prior art gene, tfdA in the Kaphammer prior art reference. Ex. 4 at 7.

The critical claim construction issue here is the meaning of "aryloxyalkanoate dioxygenase activity" in claims 1 and 2. As Corteva construes the claim, this would require the claimed polynucleotide to encode a protein with the ability to degrade only one aryloxyalkanoate herbicide such as 2,4-D. But such an activity would read on all the existing transgenic plants transformed with a gene encoding 2,4-D degrading enzymes in the prior art. The '522 patent specification emphasizes that the unexpected distinction of the AAD-12 polynucleotide is in encoding a protein that had activity in plants against multiple aryloxyalkanoate herbicides conferring resistance to 2,4-D and pyridyloxyacetate herbicides. '522 patent (D.I. 209-4) at Abstract, 3:56-58, 4:29-40, 4:51-5:5, 6:18-8:65, 10:66-11:14, 11:26-35, 12:22-43, 53:28-30. The proper construction of "aryloxyalkanoate dioxygenase activity" in claims 1 and 2 is in line with the attributes emphasized in the patent specification—broad spectrum activity capable of degrading phenoxyacetate auxin and pyridyloxyacetate auxin herbicides.

Corteva's reliance on claim 3 and other patents in the same family claiming dual resistance to herbicides as support for its single herbicide activity construction is inapposite. Corteva's Opening Brief (D.I. 208) at 20. Claim 3 is to a method of controlling weeds by applying an herbicide to plants expressing the polynucleotide of claim 1 and does not inform the definition of

the patented polynucleotide itself. The prosecutions of the other patents in the family to the contrary, support Inari's construction.

There are currently four other patents in this family with identical specifications and priority date. The last to issue, U.S. Patent No. 11,371,055 (the "'055 patent") (D.I. 209-14), informs the definition of the encoded protein in claims 1 and 2 of the '522 patent.[4] The '055 patent was rejected in view of the four previously issued patents in the family, including the '522 patent, for obviousness type double patenting and Corteva terminally disclaimed the term of the '055 patent against the family to overcome the rejection. Ex. 5 (April 24, 2019 Non-Final Rejection) at 3-5; Ex. 6 (December 2, 2021 Terminal Disclaimer) . Claim 1 of the '522 patent is to a polynucleotide that encodes a protein with 95% amino acid sequence homology to either SEQ ID NO: 2 or SEQ ID NO: 4. '522 patent (D.I. 209-4) at cl. 1. Claim 1 of the '055 patent claims a polynucleotide encoding an AAD-12 protein having at least 85% sequence homology with SEQ ID NO: 2. '055 patent (D.I. 209-14) at cl. 1. The patents claim variations of the same polynucleotide SEQ ID NO: 2 encoding the same AAD-12 protein. The claims are not patentably distinct.

The claims of the application for the '522 patent and those of the '055 patent were both rejected as obvious in view of the same prior art references, Kaphammer, Schleinitz, and Pallet. *See* Ex. 7 ('522 patent, July 14, 2011 Office Action) at 8; Ex. 8 ('055 patent, May 3, 2021 Office Action) at 3-4. In responding to the May 3, 2021 rejection of the application for the '055 patent, Corteva submitted the Declaration of Terry Wright. Ex. 9 ('055 patent, August 3, 2021 Amendment and supporting Wright Declaration). Wright represented that "[a]t the time of

[4] The validity of the '055 patent is the subject of PGR2023-00022 filed by Inari. *Inari Agriculture, Inc. v. Corteva Agriscience LLC*, PGR2023-00022 (PTAB March 27, 2023).

invention, no other a-KG dioxygenase enzymes had been reported to render the plants resistant to a phenoxyacetic acid herbicide (such as 2,4-D) and one or more pyridyloxyacetate herbicides such as triclopyr and fluoroxypyr." Ex. 9 at 17. The claims were allowed in view of Wright's representations. Ex. 10 (September 3, 2021 Non-Final Rejection) at 3; Ex. 11 (December 2, 2021 Notice of Allowance) at 3. These representations on the allegedly patentable distinction of the polynucleotide encoding the AAD-12 enzyme claimed in both patents compel Inari's construction here. *See Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004) (holding that statements of the patentee in the prosecution of a later filed application as to the scope of the invention are relevant to claim construction of an earlier issued patent in the family); *see also Absolute Software, Inc. v. World Computer Sec. Corp.*, C. A. No. 09-142-LY, 2014 WL 496879, at *8 (W.D. Tex. Feb. 6, 2014) (applying the holding in *Microsoft* and noting "statements made in connection with a later application as to the scope of the disclosed invention are not irrelevant to claim construction of an earlier invention").

D. "plant"/ "plants"/ "first plant" ('246 patent, cls. 1, 3-4, 6, 8, 10-11; '434 patent, cls. 2-7, 9, 14-15; '363 patent, cls. 1, 5-9; '441 patent, cl. 2)

Asserted Patent	Corteva's Construction	Inari's Construction
"plant"		
'246/'434/'363/'441 patents	Plain and ordinary meaning, which is organism belonging to the kingdom Plantae.	An event DAS59122 corn plant.
		An event DP-004114-3 plant.
		An event DAS81419 soybean plant.
		An event DAS81419 soybean plant.
"plants"		
'363 patent	Plain and ordinary meaning, which is organisms belonging to the kingdom Plantae.	Event DAS81419 soybean plants.
"first plant"		
'363 patent	Plain and ordinary meaning, which is first organism belonging to the kingdom Plantae.	An event DAS81419 soybean plant.

All the claims of the '246, '434, '363, and '441 patents for which Inari indicated the terms must be construed are limited to specific transgenic "events." The issue for claim construction is not how to construe the generic terms "plant," "plants," or "first plant," but how should the terms be construed in the context of the claims in which they appear. *Phillips*, 415 F.3d at 1314.

Corteva proposes a plain and ordinary meaning construction based on a dictionary definition and argues that none of the Asserted Patents require a "plant" to contain a transgenic event. To support this argument, Corteva points to generic descriptions in the patents and ignores the language in the claims to be construed identified by Inari. Corteva's Opening Brief (D.I. 208) at 21.

Corteva also cites for support claim 25 of the '434 patent directed to a method of producing hybrid corn by backcrossing the DP-004114-3 corn event plant with a plant that lacks the corn event. *Id.*. On the contrary, claim 25 which depends on claim 21 (as reproduced below) proves Inari's proposed construction is correct.

> 21. A method of producing hybrid corn seeds comprising:
>
> (a) planting seeds of a first inbred corn line comprising the DNA construct of claim 1 and seeds of a second inbred line having a genotype different from the first inbred corn line;
>
> (b) cultivating corn plants resulting from said planting until time of flowering;
>
> (c) emasculating said flowers of plants of one of the corn inbred lines;
>
> (d) sexually crossing the two different inbred lines with each other; and
>
> (e) harvesting the hybrid seed produced thereby.
>
> 25. The method of claim 21 further comprising backcrossing the second generation progeny plant of step (d) that comprises corn event DP-004114-3 DNA, deposited under Accession No. PTA-11506 with American Type Culture Collection (ATCC), to the

> parent plant that lacks the corn event DP-004114-3 DNA, thereby producing a backcross progeny plant that is resistant to at least western corn rootworm.

'434 patent (D.I. 209-2) at cls. 21, 25.

Claim 25 depends on claim 21 and further defines the corn plant resulting from the sexually crossing in step (d) of claim 21. Claim 21 is a method of producing hybrid corn seeds. Step (a) requires planting seeds of a first inbred of a corn line comprising the DNA construct of claim1 and a second inbred line with a different genotype. The DNA construct of claim 1 comprises the flanking sequences SEQ ID NOS: 27 and 28 that uniquely identify and are diagnostic of the DP004114-3 event. '434 patent (D.I. 209-2) at 4:31-36, 8:31-36. The flanking sequence limitation of SEQ ID NO: 27 and SEQ ID NO: 28 were added to the claims to overcome an obviousness rejection under 35 U.S.C. § 103. May 2, 2013 Response to Office Action (D.I. 209-9) at 3. Step (d) of claim 21 requires sexually crossing the two different inbred lines of step (a) with each other. Claim 25 states that the second-generation progeny plant resulting from step (d) in claim 21 comprises corn event DP-004114-3 deposited under Accession No. PTA-11506. Logically, the first inbred corn line in claim 21 comprising the DNA construct of claim 1 must be corn event DP-004114-3. "Plant" in claims 2-7, 9, and 14-15 of the '434 patent should be construed as a corn event DP-004114-3 plant.

Similarly, in the '246 patent, the limitation that the DNA construct be linked to at least one flanking region from the group consisting of SEQ ID NO: 19 and SEQ ID NO: 20 was added to the claims to overcome an obviousness rejection under 35 U.S.C. § 103. Ex. 12 (February 9, 2010 Non-final Rejection) at 3-4; Ex. 13 (May 7, 2010 Response to Office Action) at 2, 6. SEQ ID NO: 19 and SEQ ID NO: 20 are unique flanking sequences that identify the presence of event

DAS-59122-7. '246 patent (D.I. 209-3) at 4:1-8. "Plant" in claims 1, 3-4, 6, 8, and 10-11 of the '246 patent should be construed as an event DAS-59122-7 corn event plant.

The '363 and '441 patents are from the same patent family and concern transgenic soybean event DAS81419 also identified as soybean event 9582.814.19.1 in the patents. '363 patent (D.I. 209-5) at 2:18-23, 5:41-43, 6:17-19; '441 patent (D.I. 209-6) at 2:21-23, 5:45-48, 6:23-25. SEQ ID NO: 14, '363 patent at 5:41-43, cols. 51-63, '441 patent at 5:45-48, cols. 51-65, is the sequence of soybean event 9582.814.19.1 including the 5', SEQ ID NO: 1 and 3', SEQ ID NO: 2 genomic flanking sequences. '363 patent (D.I. 209-5) at 5:10-17, '441 patent (D.I. 209-6) at 5:14-22. As indicated by claim 3 of the '441 patent, SEQ ID NO: 1, SEQ ID NO: 2, and SEQ ID NO: 14 are all diagnostic for soybean event 9582.814.19.1.

In the prosecution of the '363 patent several rejections were leveled under 35 U.S.C. §§ 112, 102 and 103. Ex. 14 (July 10, 2013 Non-Final Rejection) at 4-19. In response, Corteva amended the claims so that they refer only to the event sequence, SEQ ID NO: 14 (5' genomic flanking, insert, and 3' genomic flanking sequence). Ex. 15 (October 10, 2013 Response to Office Action) at 3-6. In reference to the obviousness rejection of claim 9, Corteva emphasized that the claim refers to SEQ ID NO: 14 (to clarify the claimed seed comprises the event). *Id.* at 6.

The '363 and '441 patent specifications and the prosecution history of the patents compel a construction that "plants" and "plant" in claims 1, 5-9 and "first plant" in claim 6 of the '363 patent, and "plant" in claim 2 of the '441 patent be construed as soybean event 9582.814.19.1 plants. *Graham*, 383 U.S. at 33; *Microsoft*, 357 F.3d at 1350 (holding that statements made in prosecution of one patent are relevant to the scope of sibling patents).

E. "seed" ('246 patent, cls. 6, 8, 12-13; '522 patent, cl. 13; '434 patent, cls. 6, 8-9, 14-15; '363 patent, cls. 7-8; '441 patent, cl. 2)

Corteva's Construction	Inari's Construction
Plain and ordinary meaning, which is ripened ovule of a flowering plant that may develop into a new plant.	Plain and ordinary meaning, which is a seed coat, food store, and plant embryo.

The parties' proposed constructions are both based on plain and ordinary meaning. They differ on the terms used but agree that a seed is the initial stage of a plant. A "ripened ovule of a flowering plant" as proposed by Corteva is the same as a "plant embryo" proposed by Inari. Inari's proposed construction is more accurate in that encompasses the additional parts of the seed—seed coat and food store. Ex. 16 (Lawrence Kelly et al., *What Is a Seed?*, New York Botanical Garden (April 2, 2021), https://www.nybg.org/planttalk/what-is-a-seed).

As set forth in the New York Botanical Garden explanation in "What Is a Seed?", a plant embryo is a tiny plant that has a root, a stem and one or more leaves. That a seed is generally considered to be a plant is confirmed by claims 6-9 and of the '246 patent, which recite "wherein said plant is a seed." '246 patent at 78:36-39. Inari's proposed construction more accurately defines "seed" and the use of the term in claims 6, 8, and 12-13 of the '246 patent; claim 13 of the '522 patent; claims 6, 8-9, and 14-15 of the '434 patent; claims 7-8 of the '363 patent; and claim 2 of the '441 patent. *Interactive Gift Exp.*, 256 F.3d at 1331 ("In interpreting an asserted claim, the court should look first to the intrinsic evidence of record . . . to the claim language.").

IV. CONCLUSION

Inari respectfully requests that the Court adopt its proposed constructions as set forth above.

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April 21, 2025

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The undersigned counsel hereby certifies that the foregoing document contains 7,430 words, which were counted by using the word count feature in Microsoft Word, in 12-point Times New Roman font. The word count does not include the cover page, tables of contents and authorities, or counsel blocks.

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CERTIFICATE OF SERVICE

I hereby certify that on April 21, 2025, I caused the foregoing to be electronically filed with the Clerk of the Court using CM/ECF, which will send notification of such filing to all registered participants.

I further certify that I caused copies of the foregoing document to be served on April 21, 2025, upon the following in the manner indicated:

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